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EXAMINER

LY, NGH H

| ART UNIT | PAPER NUMBER |
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2686

DATE MAILED: 06/09/2004

12

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/804,110

Applicant(s)

SANTHOFF ET AL.

Examiner

Nghi H. Ly

Art Unit

2686

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14, 16-19 and 23-25 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-13, 16-18, 23 and 24 is/are rejected.
- 7) ☒ Claim(s) 14, 19 and 25 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|-----------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input checked="" type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. <u>12</u> . |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>12</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Election/Restrictions

1. Applicant's election of Group I (claims 1-14,16-19 and 23-25) with traverse by telephone (dated 02/20/2004) is acknowledged. Group II (claims 15, 20-22 and 26 are Non-elected). Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 1-7, 11-13, 16, 17, 23 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shi (US 6,507,740) in view of Shattil (US 6,686,879).

Regarding claims 1, 4, 11, 13, 16, 17, 23 and 24, Shi teaches a method for performing a soft hand-off in a cellular communication system (see column 1, lines 45-53), comprising the steps of: monitoring signal strength and the bit error rate from a primary source (see column 3, lines 40-58), monitoring signal strength and the bit error rate from a secondary source (see column 3, lines 40-58), comparing the strength of the signal and the bit error rate from the primary source to the strength of the signal and the bit error rate from the secondary source or to predetermined levels (see column 3, lines 40-58), and transferring data reception and transmission from the primary source to the secondary source when the strength of the signal from the secondary source is greater than the strength of the signal of the primary source *or* when the bit error rate of the secondary source is less than the bit error rate of the primary source *or* when either signal strength or bit error rate is below a pre-determined level (see column 3, lines 16-31 and see column 3, line 59 to column 4, line 3).

Shi does not teach a method for performing a soft hand-off in an ultra-wideband cellular communication system.

Shattil teaches performing a soft hand-off in an ultra-wideband cellular communication system (see column 3, lines 24-35 and see column 4, lines 35-51).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the teaching of Shattil into the system of Shi in

order to provide a method for performing a soft hand-off in an ultra-wideband cellular communication system.

Regarding claims 2 and 3, the combination of Shi and Shattil teaches the step of monitoring signal strength and bit error rate from the primary/secondary source claim 1 (see Shi, column 3, lines 40-58, the teaching of Shi inherently teaches monitoring signal strength and bit error rate require a certain duration of time).

The combination of Shi and Shattil does not specifically disclose the step of monitoring signal strength and bit error rate from the primary/secondary source is performed for at least about 0.5 seconds.

However, such 0.5 seconds would have been obvious since the particular second could have been determined by the inventor's needs e.g., use a particular second which can reduce can reduce the probability of call drop-out in a most optimal way during the handoff.

Regarding claims 5, 6 and 7, the combination of Shi and Shattil teaches the bit error rate (see Shi, column 3, lines 40-58). The combination of Shi and Shattil does not specifically disclose the bit error rate is about 10^{-3} , 10^{-5} or 10^{-10} .

However, such bit error rates recited in claims 5, 6 and 7 would have been obvious since the particular bit error rates could have been determined by the inventor's needs e.g., use a particular bit error rates which can reduce the probability of call drop-out in a most optimal way during the handoff

Regarding claim 12, Shi further teaches the primary source is a base station,

wherein the secondary source is a base station (see column 3, lines 15-57), and wherein each base station is linked to a plurality of mobile units (see fig.2, plurality of mobile units 10A and 10B).

5. Claims 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shi (US 6,507,740) in view of Shattil (US 6,686,879) and further in view of Kong et al (US 6,473,619).

Regarding claims 8 and 9, the combination of Shi and Shattil teaches the primary source and the secondary source are base stations (see Shi, column 3, lines 41-58). The combination of Shi and Shattil does not specifically disclose the base stations have a hexagonal topology configuration with overlapping coverage, wherein a single base station is connectable to six other base stations for handoff and channel coordination.

Kong teaches the base stations have a hexagonal topology configuration with overlapping coverage, wherein a single base station is connectable to six other base stations for handoff and channel coordination (see column 3, lines 43-46 and see fig.1).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the teaching of Kong into the system of Shi and Shattil so that data can be transmitted faster.

6. Claims 10 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shi (US 6,507,740) in view of Shattil (US 6,686,879) and further in view of Chheda (US 6,266,529).

Regarding claim 10, the combination of Shi and Shattil teaches claim 1. The combination of Shi and Shattil does not specifically disclose a base station completes a soft hand-off when a mobile unit moves from one sector to another sector.

Chheda teaches a base station completes a soft hand-off when a mobile unit moves from one sector to another sector (see column 9, lines 15-19).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the teaching of Chheda into the system of Shi and Shattil in order to off-load traffic between sectors and improve system performance.

Regarding claim 18, the combination of Shi, Shattil and Chheda teaches the channel comprises at least one of a sequence code in a code-division multiple access (CDMA) scheme (see Chheda, column 9, lines 8-15), and an ultra-wideband radio channel (see Shattil, column 4, lines 35-51).

Allowable Subject Matter

7. Claims 14, 19 and 25 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Regarding claims 14, 19 and 25, the combination of Shi (US 6,507,740) and Shattil (US 6,686,879) teaches the method the soft hand-off involves dynamic power range linking (see Shi, column 1, lines 45-53), wherein: a mobile device is linked to a first base station (see Shi, fig.1, wireless link between mobile 2 and base station 1).

Shi (US 6,507,740) and Shattil (US 6,686,879), alone or in combination fails to teach requesting the position of a plurality of base stations, the plurality of base stations reply, the mobile unit determines and stores the location of each of the base stations, each of the base stations transmits an associated rating to the mobile device, the mobile device calculates the data integrity of each base station and establishes a link with a base station having the highest data integrity, and the mobile device transmits a link curtailment to the first base station.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.
 - a. Mhebbi (US 6,606,597) teaches soft hand-off in cellular mobile communication networks.
 - b. Amirijoo (US 6,728,217) teaches system and method for modifying the data rate for data calls in a cellular network.
 - c. Vaara (US 6,321,083) teaches traffic hot spot locating method.
9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nghi H. Ly whose telephone number is (703) 605-5164. The examiner can normally be reached on 8:30 am-5:30 pm Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marsha Banks-Harold can be reached on (703) 305-4379. The fax phone


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number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Nghi H. Ly

NAH
05/30/04


CHARLES APPIAH
PRIMARY EXAMINER